Discrete Reliability Growth Planning Curve Risk Assessment (1/2)

Category	Low Risk	Medium Risk	High Risk
$\frac{\text{MTTF Goal (DT)}}{\text{MTTF Growth Potential}}$	$\frac{M_G}{M_{GP}} = \frac{1-R_{GP}}{1-R_G} < 0.70$	$0.70 \le \frac{1-R_{GP}}{1-R_G} \le 0.80$	$\frac{1-R_{GP}}{1-R_G} > 0.80$
IOT&E Producer's Risk	≤ 20%	20⁺ - 30%	> 30%
IOT&E Consumer's Risk	≤ 20%	20⁺ - 30%	> 30%
Management Strategy	< 90%	90 - 96%	> 96%
Fix Effectiveness Factor	≤ 70%	70⁺ - 80%	> 80%
$\frac{\text{MTTF Goal (DT)}}{\text{MTTF Initial}}$	$\frac{M_G}{M_I} = \frac{1-R_I}{1-R_G} < 2$	$2 \le \frac{1-R_I}{1-R_G} \le 3$	$\frac{1-R_I}{1-R_G} > 3$
Time to Incorporate and Validate Fixes in IOT&E Units Prior to Test	Adequate time and resources to have fixes implemented & verified with testing or strong engineering analysis	Time and resources for almost all fixes to be implemented & most verified w/ testing or strong engineering analysis	Many fixes not in place by IOT&E and limited fix verification

⁺ indicates strictly greater than

MTTF = Mean Time To Failure

Programs should find an acceptable balance between these technical risks and their associated cost/schedule implications

Discrete Reliability Growth Planning Curve Risk Assessment (2/2)

Category	Low Risk	Medium Risk	High Risk
Corrective Action Periods (CAPs)	5 or more CAPs which contain adequate calendar time to implement fixes prior to major milestones	3 - 4 CAPs but some may not provide adequate calendar time to implement all fixes	1- 2 CAPs of limited duration
Reliability Increases after CAPs	Moderate reliability increases after each CAP result in lower-risk curve that meets goals	Some CAPs show large jumps in reliability that may not be realized because of program constraints	Majority of reliability growth tied to one or a couple of very large jumps in the reliability growth curve
Percent of Initial Problem Mode Probability of Failure Surfaced	Growth appears reasonable (i.e. a small number of problem modes surfaced over the growth test do not constitute a large fraction of the initial problem mode probability of failure)	Growth appears somewhat inflated in that a small number of the problem modes surfaced constitute a moderately large fraction of the initial problem mode probability of failure	Growth appears artificially high with a small number of problem modes comprising a large fraction of the initial problem mode probability of failure

Programs should find an acceptable balance between these technical risks and their associated cost/schedule implications